

# VIRGINIA WILDLIFE

FEBRUARY 1985

ONE DOLLAR



# VIRGINIA WILDLIFE

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Evening Grosbeak (female): photo by Gregory K. Scott, Gilman, Wisconsin. If you dream of capturing this kind of photo, read Richard Simms' advice beginning on page 18.

The back cover: Civil Bluets Damselfly by Curtis Badger, Hebron, Maryland. Curtis waxes philosophical about all the creatures, such as this one, that make up the secret life of a pond (page 9).





# Singles Shooting

With the aid of a good dog, hunting singles may be the best way to bring quail to your game bag.

by Bob Gooch



**H**unting the bobwhite quail was a real joy in rural Virginia during the late 1930's and early 1940's. There were plenty of birds, and the family-farm type of agriculture provided them with nearly ideal food and cover. Bird hunters never had it better—and it had been that way for generations. It was an ideal time to learn this popular kind of hunting Virginians had enjoyed so long.

And the birds were honest, as hunters are prone to say. They held well for the dogs, flushed in tight coveys, and often alighted on the far side of the field. The fact that they survived is a miracle, but hunting pressure was light then. For every bird hunter there were dozens of rabbit and squirrel hunters.

The covey shooting was good during those golden years of quail hunting, but even then most bird hunters relied upon the singles shooting to fill their limits. For the uninitiated, a single bird is one separated from the covey—usually following the flush of a covey. For many bird hunters, including the contemporary ones, this is the heart of quail hunting, and the basics have changed very little over the years.

Let's look at some of the ingredients of successful singles hunting, often the difference between a full bag and a slim one.

Of utmost importance is a good singles dog, a slow, plodding dog with a strong nose and the patience to work out the area where the flushed birds alighted. Wide ranging pointers and setters are seldom good at singles hunting, although a good one comes along every once in awhile, a dog as adept at finding singles as it is at covey hunting. Over the years I've been blessed with a couple of them, one a fine little pointer and the other a big-going setter.

Sometimes the plodding continental breeds such as the German short-haired pointer make the best singles dogs. They have strong noses, lots of patience, and the willingness to work the cover thoroughly. The best singles dog is one that works reasonably close to the hunter.

A good combination is a couple of wide-ranging pointers or setters to locate the coveys and a third dog adept at locating the singles. Good singles dogs, incidentally, are also good at locating and retrieving dead birds. I just lost an aging German short-haired pointer that I could



*Single quail can fill the bag.*

always rely upon when it was time to hunt the single birds or retrieve a dead one from heavy cover. All I had to do was take him to the general area and give him time to work out the puzzle. Invariably he was successful. He rarely located a covey of quail for the simple reason that my fast, wide-ranging setter never gave him a chance.

**H**unting the single quail begins when your dogs go on point. A quick survey of the available cover will tell you where the birds are most likely to go once they are flushed—to the nearest timber or other heavy cover. Determine this and you are ahead of the game. The modern bobwhite is seldom far from good cover, particularly when it is feeding in the open.

If the birds flush wild, giving you no chance for a covey shot, you will have no trouble following their flight and marking down the general area in which the scattered birds alight. Rarely, however, will all of the birds go in the same direction, so marking down all of them may be difficult. Most hunters concentrate on the area where the bulk of the covey settled down.

If you are fortunate to get close enough for a covey shot, then the task becomes more demanding. First you concentrate on the shooting, attempt to mark down any birds you drop, and then try to pick up the flight of the departing birds and mark them down. It isn't easy, but if you own a good singles dog, you can depend upon him to locate the dead birds while you concentrate on following the flight of the flushed ones.

**T**he hunter who does not attempt to mark down the flushed birds isn't likely to enjoy any singles shooting.

And irrespective of how hard you try, it will often be difficult to pinpoint the exact location of the flushed birds. They may disappear over a hill, into a deep ravine or valley, or more likely into the woods before alighting. Then all you have to work on is the general direction in which they flew. The modern quail has the disconcerting habit of putting some distance between itself and the hunters and then swerving to the left or right before alighting.

Some knowledge of the kind of cover the flushed quail seeks can be helpful in locating the singles.

First bear in mind that the bobwhite quail does not enjoy a lot of maneuverability in flight. It is by choice a walker, spending most of its time on the ground where it feeds, nests, and roosts. It resorts to flight only when danger suggests a fast getaway. It does not have the ability to flit about like so many smaller birds. Consequently, it seeks openings in the forest canopy through which to reach the ground. Experienced quail hunters learn to look for such openings, particularly when they have lost the exact spot where the singles have alighted.

Anything that breaks up the forest canopy is worth checking out. Swamp areas are good. So are logging roads, and small clear-cuts in stands of timber are also good. Mature stands of hardwoods hold some attraction as there is usually room for the fleeing, careening bird to reach the forest floor without colliding with a tree or some other obstacle.

Flushed birds that attempt to put down in thick pin forests often end up alighting in the trees, a habit that can be disconcerting to both the hunter and his dogs. Birds flushed from perches in the pines are usually gone before you can locate them for even a fleeting shot.

Bob Gooch



An understanding of the typical behavior of the single quail is essential to successful hunting.

While the bird can usually be depended upon to alight in an open area, it does not necessarily stay there. The break in the canopy simply facilitates its getting back to its beloved earth. Once there it may scoot quickly away to the closest cover. This is particularly true when it alights on a logging road where the cover is typically scant. Birds are likely to be found on either side of a logging road, not on it.

While the strong scent of a feeding covey of quail is easy for most dogs to pick up, the situation changes drastically when the covey breaks up and you are looking for the scattered singles. When the single bird hits the ground following its fast flight from where the covey was flushed, it is air washed and temporarily all but devoid of strong body scent. It hits the ground and scoots away, leaving little

for the dog to work on. It is here that the dog with a very strong nose enjoys an advantage. And it is also one of the reasons the dogs should be allowed plenty of time to work out the cover. Once the bird settles into its hiding place, its body will begin to emit odors and the dog's chances will improve considerably. So give your dog time to do his work.

**A**nd while the modern covey of quail is skittish and likely to flush wild without giving the hunter a chance, the opposite is true of the single bird. Alone and frightened when it hits the ground, it is likely to seek the nearest cover and freeze there. Sometimes you have to all but step on it before it will flush. This makes for excellent bird dog work.

The quail hunter who walks rapidly when hunting the singles makes a mistake, as he may pass within inches of many birds without flushing them. Adopting the tactics of

the grouse hunter may pay dividends here. Walk slowly and stop frequently—and expect a flush when you stop.

Many wingshooters do much better on the single birds than they do on the coveys. The reason is simple. There is only one target to concentrate on. The explosive flush of a covey is unnerving and confusing. The hunter has trouble selecting a target from the dozen or so suddenly out there, and he ends up shooting into the covey, a sure way to come up empty.

I never passed up the chance for an exciting covey shot back there in the early 1940's when I was cutting my teeth on quail hunting, and I don't today. Good covey shooting is much more difficult to come by today—and so is good singles shooting for that matter.

The singles are more predictable, however, and hunting them is the best way to bag your game. □

*A good combination is a couple of wide ranging pointers or setters to locate the coreys and a third dog adept at locating singles.*

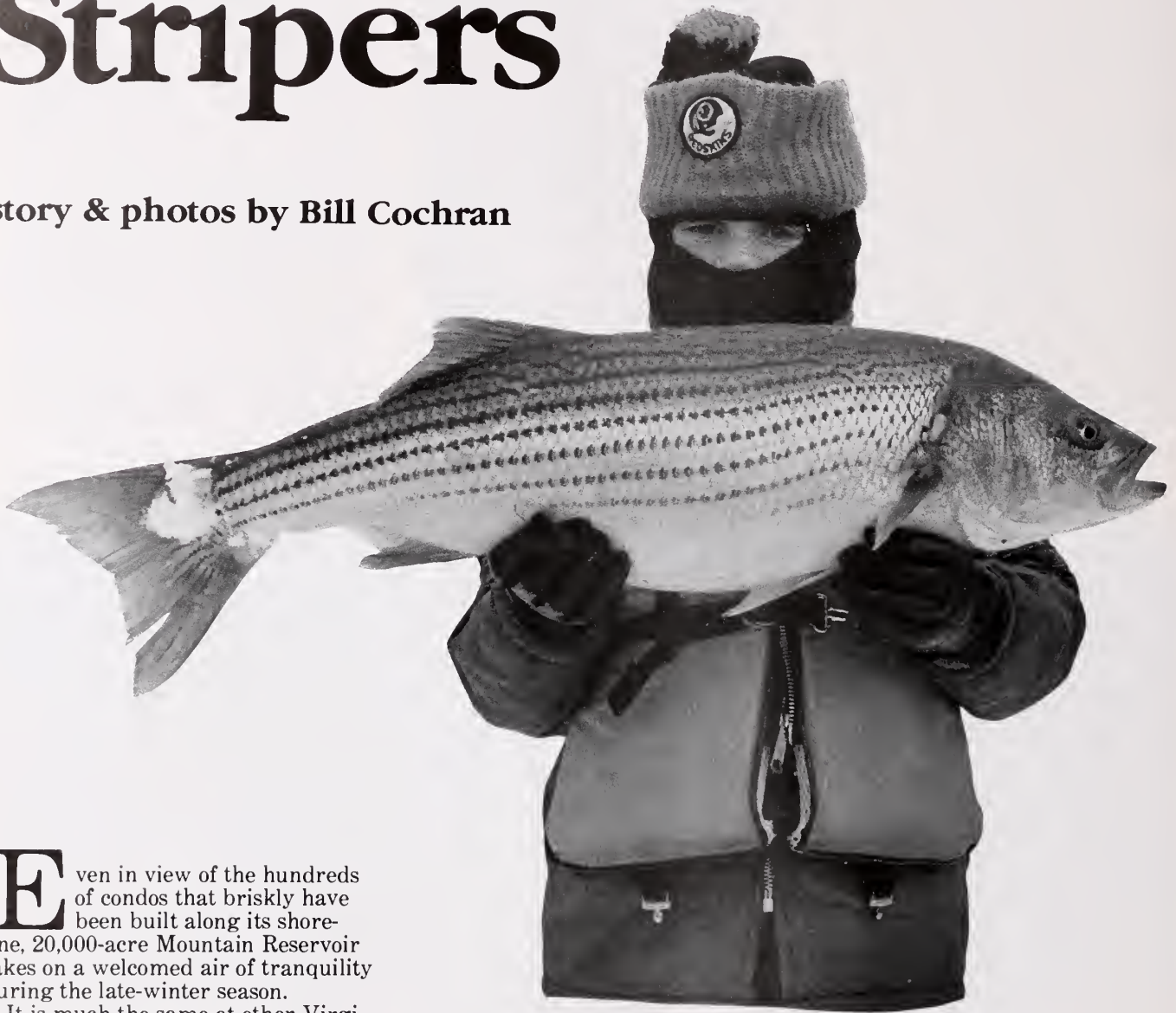


Bob Goorch



# Spoon-Fed Stripers

story & photos by Bill Cochran



**E**ven in view of the hundreds of condos that briskly have been built along its shoreline, 20,000-acre Mountain Reservoir takes on a welcomed air of tranquility during the late-winter season.

It is much the same at other Virginia impoundments, Kerr, Gaston, Anna and Claytor included. The traffic is light, both to the launching pad and on the water once you get there. The water skiers have long ago stashed their gear, and most pleasure boats have been dry docked. Warm-weather participants are bowling or watching basketball or doing whatever water skiers and pleasure boaters do come winter.

This leaves the lakes almost entirely to the diehard angler, who doesn't especially relish sharing his domain in the first place. He is

**Finding the fish is not easy and when you locate them the fishing method is an intricate technique—but vertical jigging is a deadly method for stripers.**

delighted that everyone else is "laying low."

Unfortunately, even some of his finny friends are doing the same when metabolisms don't crank out many rpms. Not the boisterous striped bass, fortunately. Because the striper has been successfully introduced to Smith Mountain, and also is finning about in the other lakes mentioned above, winter has become a particularly pleasant time of year for the longjohn-clad fisherman. Praise the striper!

Praise him, that is, if you understand his seasonal cycles, those idiosyncrasies that help amplify his movements and behavior and make him more predictable, even in the dead of winter.

Catching striped bass in the wintertime, as can be said of any season, is a matter of locating the fish, and locating the fish frequently is a matter of determining the whereabouts of their food source. Like an army, striped bass travel on their stomachs, a point well to remember, winter, summer, spring or fall.

Locating stripers, for the average fisherman, can be a tad more difficult in the winter, because the fish frequently are at deceptive depths. While an occasional school surfaces during the frigid months, for the most part your "eye" becomes a fish locator. The trick is to learn to decipher what the graph read-out or the flashing face of your locator is telling you. Once you determine what you are seeing is a school of fish and not a sunken tree waiting to add your lure to one of its outstretched limbs, then you can spoon-feed stripers. It is a deadly method, and if you are wondering why more fishermen aren't onto it, you can assume they haven't bothered to pay their dues to learn it. It is an intricate technique.

We are talking about vertical jigging, which consists of locating a school of stripers, positioning your boat directly over it and working a lure, normally a spoon, straight up and down into the school.

At no time is the technique more productive than the final three-quarters of winter. The striped bass then tend to downplay their nomadic tendencies and peg their tents more permanently. Frequently this is down on sunken bars or extending points or along creek channels where the fish gather in compact schools 20 to 45 feet deep. To locate them, you assume the status of a quail hunter. Your fish locator becomes your pointing dog,



*Some species grow docile during cold weather; fortunately, stripers aren't among them, as Dicky Byrd and Gene French demonstrate.*

the tool necessary to pinpoint the coveys of fish well hidden in their lairs. Like the quail hunter, you soon learn to mark off unproductive areas and concentrate only on the spots that offer the greatest promise. Generally, these will treat you favorably, week after week, winter after winter. It is prudent to have a half-dozen or more points or bars mapped out to ply your spoon. When the fish become disinterested at one, you simply move to another. Here's a type of bar-hopping even your spouse won't mind your doing.

What you want to discover, as you slowly move from the shallow to the deep side of the bar or point, is a school of stripers on a horizontal plane just off the bottom. On a flashing-type locator, this will be a broad, bright band, or several bands stacked atop one another, just above the translucent light that signifies the bottom line. Up until this point you have been hunting, not fishing. It is when your locator lights up like a Christmas tree that you are given the invitation to reap the makings of a fish fry.

The tack is to hold directly over the school, with the help of your electric guiding motor, and to allow a spoon-type lure, such as the Virginia-made Hopkins Shorty Series, to plummet vertically to the bottom. Then you apply quick, abrupt, up-and-down movements with your rod, which

cause the lure to jet upward and flutter downward.

If the stripers are in a feeding mood, look out, because this is an excellent imitation of a wounded or dying baitfish. For a hungry striper, it can mean just one thing—an easy meal. For a striper fisherman, it can mean a bowed rod and big grin. It is not unusual to take several fish from a school before they realize some trickery is involved.

Spooning is best done with a baitcasting reel and a 6- to 7-foot rod of "popping rod" design, although the more common baitcasting rod will work. In all cases, one of the newer, super-sensitive rod materials, such as graphite, should be selected.

Sometimes strikes are harsh, but more likely they will be gentle. The fish simply will be sucking the spoon in as it flutters downward in the falling cycle of the jigging process.

With this in mind, you need to learn to tend your rod and line carefully. The rod tip should follow the fall of the lure so you can feel the lure flutter downward and be poised to strike at the slightest tap. The line always should remain vertical; after all, this is vertical jigging, isn't it? An extra element of sensitivity is accomplished when you pinch the line between the forefinger and thumb of your rod hand, something that can help alert you to even bluegill-size pecks.



Keep the jigging procedure rhythmic, but try varying the speed and distance of the lift until you hit upon the winning combination for the day. The deeper the fish, the heavier the spoon necessary for proper feel and control of the lure. In turn, the heavier the spoon, the more powerful the rod necessary.

Growing numbers of wintertime fishermen are learning to apply bait with skill. Using shad or alewives or some natural-type bait, live or cut, they lower the offering to the creek-channel travelways or the feeding bars or points of the impoundment. Then it becomes a matter of waiting out the arrival of cooperative stripers.

The time comes when late winter and early spring begin to merge, sometimes so quietly it is difficult to tell which is which, other times in a pushing and shoving match to determine which is dominant. Either way, the impact is much the same on the striper. The longer days, the warming water temperatures, the growing weight of eggs and sperm building in body cavities, all begin to stir the migratory mysteries of these fish whose heritage is the vastness of the sea. It makes little difference if they are confined to a 5,000- or 50,000-acre lake, fecundity has its pull.

Stripers become more nomadic. They begin to roam, to feed more heavily, to be more likely to frolic on the surface. Moving water assumes increased importance to them.

The striped bass in Kerr, where a self-sustaining population makes springtime runs up the Roanoke and Dan Rivers, begin to inhabit staging areas in the upper reaches of the sprawling reservoir. Schools come in random fashion and the fish will assemble in relatively confined spaces, like athletes gathering for a marathon. They appear torn between two forces, of staying in the stillwater environment which has hosted them comfortably for many months, or of responding to the growing ardor to spawn.

The latter urge is undeniable and will be the winner, but not before the stripers give considerable time to pondering the choices. This hesitancy, as physical and biological conditions build for a favorable ascent onto the spawning grounds, 40 to 80 miles upstream, afford fishermen vigorous and confined targets. Anglers who know where to ply spoons, bucktail jigs and baits in headwater staging areas can be rewarded handsomely. The traditional high, discolored water

of springtime can be the greatest deterrent of this sport.

The imprint of spring does not escape striped bass locked in impoundments that offer little or no opportunities to escape stillwaters. It always is well for striper fishermen to remember that these fish have been anadromous for centuries and landlocked only for a twinkling of an eye. *Dromous* translates to "running."

For striped bass in Gaston, running means easing into the headwaters of the impoundment and eventually into the powerful surges of tailrace water that roar out of the bowels of upstream Kerr Dam. At Claytor Lake, some of the first striper action of the year occurs in the Peak Creek area, just after the ice goes out.



*A catch like this is enough to bring a broad smile to the face of Dillard Grubb, who is a friend of the gulls.*

For Smith Mountain, running means leaving deep-water sanctuaries to patrol the shoreline shallows for baitfish. This can occur mid-to-late February, when all of a sudden spooning techniques go sour. It is an exceptionally fine time to challenge one of the lake's famed 30-pound-plus citations. Baitfish numbers are reaching their lowest levels at this point, which results in less competition for your lure.

Now is the time to cast bucktail jigs—white or yellow are best—to sloping shorelines, to shoreline points, to creek channel points that ease into 15- to 25-foot depths. Stripers can be

found in both the upper and lower reaches of the impoundment. Bait fishing will be most productive in the upper Roanoke River arm, from just below Hales Ford Bridge upstream to just past Hardy.

As the water temperatures warm, minnow-shaped lures, such as the Red Fin, Rebel and Rapala, are a good addition to bucktails. The plugs, especially, can be deadly when stripers inhabit increasingly shallow water along the shoreline and when they push well back into the coves and tributaries where the water warms the fastest.

While the peak of the top-water season is yet to come, be aware that an occasional school of fish will cut the surface, even during frigid-weather periods. You can keep an eye cocked for these marauders by watching the activities of gulls. A sudden grouping of gulls, particularly if they are wheeling about and diving to the surface, can mean a school of feeding fish, since the birds delight in picking up baitfish that have been disabled as stripers voraciously chop and slash through them. Binoculars can help you view birds that are impossible to see with the naked eye.

Schools that attract gulls won't necessarily be on the surface, but frequently will be at 5- to 15-foot depths, so it pays to allow your jig to sink, by counting it down to the proper depth, before it is retrieved.

Last winter, Dillard Grubb, who lives on the shoreline of Smith Mountain, found the gulls to be especially cooperative—or were they merely repaying him for his kindness?

Grubb was boating up the Blackwater River arm of the lake when he noted several gulls resting on the water. He paused to feed some loaves of stale bread he carries for such occasions. Then he motored on, unsuccessfully searching for stripers.

On the way back down the lake he spotted the gulls circling and plunging to the water. Figuring they were over a school of stripers, he moved in close enough to cast a 3/8-ounce jig into the fracas. One of the gulls swooped down and picked up the lure, carried it approximately 50 feet and dropped it. Immediately, a 14-pound, 3-ounce striper grabbed it.

After battling the fish to his boat, Grubb caught and released seven more stripers before the fish sounded and the gulls disappeared. Such winter time action certainly beats sitting home by the fire or watching TV, and that's no fish tale. □



# ECOLOGY in a jar

**Mosquito hawks and microscopes  
tell a unique story of the  
teeming life found in  
your favorite fishin' hole.**



**story & photos by Curtis Badger**



**O**n my tenth birthday, in the illusion that they were steering me toward a career in medicine, my parents gave me a microscope. What I really wanted was Spalding's new Bill Skowron model first baseman's mitt.

My disappointment did not last long, however. One of the first "experiments" in the manual that accompanied the microscope was the Secret Life of a Pond Research Project. I liberated one of Mom's canning jars from the kitchen, and, research manual in hand, headed for a small farm pond not far from our home. At the shallow end of the pond, where the cattails and pickerelweed grew, I found my quarry. In the warm water at the base of the plants, growing in thick, wavering blankets of green, was an entire colony of slimy green stuff referred to in the research manual as algae.

As recommended in the manual, I waded carefully into the bed of algae and gently scooped a quart of green slime and water into one of Mom's best Ball widemouth tomato jars. I secured my catch with one of her Sure-Seal lids, and headed back to my bedroom lab for Step Two of the project.

I was interrupted in my experiment by my mother, who, following a trail of drying green slime through the kitchen, into the living room, and up the stairs to my bedroom, demanded in no uncertain terms that I remove all green slime from the premises. She also suggested that I apply some Ajax and hot water to my new U.S. Keds in an attempt to return them to their original white condition. She did not mention the purloined canning jar, reasoning, I suppose, that it was a small price to pay for a son who would one day be a practitioner of the healing arts and a dabbler in tax sheltered real estate investments.

My parents gave up all fantasies of medical careers and tax shelters when they saw my grades in high school chemistry, but I will never forget the delicious tingle of excitement I felt that day when I looked for



(Top) Dragonfly, (insert) dragonfly larva, (bottom) damselfly, (right) pickerelweed.





the first time through the microscope and saw the teeming arena of life held in that pond water. I soon was able to identify such single-celled critters as amoebas and paramecia, the tube-like hydras, and the rotifers with their wheel-like cilia that seemed to suck everything in their path into the animal's digestive system.

**T**he microscope sparked an interest in ponds that still exists. I know some ponds very well, have known them most of my life. There are ponds near my home on the Eastern Shore where I caught tadpoles as a boy, where I learned to fish for bass and bluegills with an ancient salt-water rig and a rusted hook baited with an earthworm. I know most of the secrets of these ponds. I know where the dropoffs are, and I know the location of the submerged stumps and tree trunks favored by bass. I know when and why the ponds were made; most were dug by farmers for irrigation purposes, or by construction companies to get fill dirt for road projects.

But all ponds are different and have different personalities. A pond changes with age; its plant and animal life varies as it matures. When I'm driving through the state and pass a roadside pond, I invariably slow down, giving it a quick visual check, guessing why and when it was created, where the likeliest place would be to catch a big bass. I would probably be wrong. You have to live with a pond for a while to know it well. And for every pond there is a thirteen-year-old who lives in a farmhouse down the road who knows that particular pond better than anyone. He has caught bass and sunfish in it for years, has spent countless hours exploring it. If I wanted to know where to find the bass, that is the person I would go to.

Although all ponds have their individual quirks and idiosyncracies, they have one thing in common: all are self-sufficient ecological units, and the only outside source they depend on for life is the sun. It is the sun that makes possible the green magic of photosynthesis, the process of creating sugar molecules from carbon dioxide, sunlight, and water. It is this chemical transformation which makes life possible for the algae, the cattails, ferns, pondweeds, arums and pickerelweeds, plantains and water lillies—all of the green plants that grow in the pond's littoral habitat.



A pond, no matter how small, provides an excellent example of the relationship of plants and animals to their environment, and to each other. In this small, concentrated world, the struggle for life is carried out with unique intensity. With the probable exception of a saltmarsh, there is no place else on earth where living things are so concentrated, where the daily business of life is so relentless.

As in a saltmarsh, the most important element in the food-energy continuum of the pond is the least conspicuous. The food web begins with the microscopic green plants, such as the algae I brought home in Mom's canning jar. The small green plants feed most of the small animals of the pond: insects, tadpoles, snails, worms, rotifers, small crustaceans, and various kinds of beetles. These animals are in turn preyed upon by small flesh-eating (carnivorous) animals, including fish, dragonfly nymphs, beetle larva, turtles, and frogs. These are eaten by larger fishes, birds, snakes, and animals.

Although fishermen might have to compete with ospreys and great blue herons for their catch, some of the food web relationships in the pond directly benefit humans. If you have ever lived near a pond or marshy area in the summer, you are no doubt familiar with the high-pitched whine and irritating sting of the mosquito. If your pond had a healthy population of dragonflies and damselflies, however, you probably noticed a curious and pleasant lack of these pests.

The dragonfly's nickname, mosquito hawk, is well-earned. The mature insects are well equipped for aerial hunting. They have massive eyes of some 29,000 facets, which give them excellent sight in almost any direction. The front legs form a basket to catch prey on the fly, and the legs are covered with sharp spines to keep the victims from escaping. Large dragonflies are capable of speeds up to 30 miles per hour, and they can out-maneuver almost any other flying insect. The sight of dozens of dragonflies patrolling the grassy perimeter of a pond is good

*(Left) Assassin beetle, (top right) dragonfly, (bottom right) dragonfly.*







news for the fisherman, who can probably keep the bottle of bug repellent in the tackle box.

**T**he dragonfly's aerial attack against mosquitoes is only the most visible aspect of the battle. Beneath the surface of the pond, another battle is being waged. It is ironic that the beautiful, graceful dragonfly spends most of its life as a somewhat squatty, decidedly ugly, underwater nymph. Some species spend up to four years in the nymphal stage before climbing a reed or rock and beginning the amazing metamorphosis into a flying insect.

But underwater, the dragonfly nymph does to mosquito larvae what their adult counterparts do to mature mosquitoes. In an experiment at the University of Pennsylvania, Philip P. Calvert once determined that a single dragonfly nymph would eat 3,037 mosquito larvae a year.

Like the mature dragonfly, the nymph is particularly well-equipped for hunting. It has a hinged lower jaw which can be thrust forward to grasp its prey, and is then pulled back to the mouthparts.

The nymphs are also formidable swimmers. The dragonfly nymph propels itself through the water by forcing water in and out of gills in its rectum. It also breathes in this manner, absorbing dissolved oxygen directly from the water. The smaller damselfly nymph has three leaf-like gills at the tip of its abdomen which are used to take in oxygen.

Not all the insects of the pond are aquatic in their larval and adult stages. Unlike most creatures of the pond, these insects can fly from pond to pond, swamp to swamp, and can quickly colonize a new pond, feeding on its plants and on each other.

All the pond's aquatic insects must have oxygen, which they take on either by absorbing dissolved oxygen from water, or by making periodic trips to the surface to take on a fresh supply of air. Adult aquatic insects and larva have developed various methods of recharging their air supplies. The adult diving beetle has a row of small holes, called spiracles, along its abdomen. When it needs oxygen, it extends its abdomen above the surface of the water for an instant, then submerges. The larvae of many flies, mosquitoes and gnats breathe in a similar fashion, extending siphons or tubes formed by hairs above the surface of the water.







*Damselfly. Together with dragonflies, these insects make up about 400 species in North America.*

**S**ome insects use air for purposes other than breathing. The diving beetle, for example, traps air beneath its wing covers and uses it for buoyancy. The beetle then clings to the stalk of a convenient aquatic plant, and when a suitable prey—dragonfly nymph, tadpole, mosquito larva—happens by, it attacks, propelled by strong thrusts of its powerful hind legs.

In the pond, for every hunter there is a prey, and every hunter is itself at times prey for a larger, more powerful creature. The flies, larvae and beetles of the pond make up the principal diets of pond fish. If you inspect a fly fisherman's collection of lures, you will see that it looks like a cross section of the aquatic insect life of the pond. Caddisfly larvae are an important food for freshwater fish, particularly trout, and fishermen have been trying to fool fish with cleverly-tied imitations for years. Mayflies are also a popular ingredient in the diets of most fish, and are correspondingly

popular baits for fishermen.

When you see mayflies, dragonflies, mosquitoes and other flying insects at a pond, you are probably observing the insect in its most ephemeral state. These insects spend most of their lives beneath the surface of the water, where the casual pond-watcher does not see them. The brief flight stage of their lives is fleeting, usually lasting only long enough for them to mate, and for the female to lay eggs.

The caddisfly, for example, spends most of its life in the larval stage, living for only about a month as an adult after going through two weeks in a pupal state.

Although the mayfly lives as long as three years as an aquatic nymph, the adult flying stage lasts only a few hours. They mate in flight, in swarming clouds of insects hovering just off the surface of the water. As soon as the female lays her eggs, she dies.

Dragonflies enjoy a bit more longevity as adults, but again, most of their lives are spent beneath the surface of the water. Some species live as

nymphs for up to four years before emerging from the water and spending one season as a flying, mature insect. The exclusive purpose of the adult insect seems to be to mate, lay eggs and begin the process of reproducing itself.

Like the lives of the caddisflies and dragonflies, all of the creatures of the pond are part of a cycle of life that is self-sustaining. All animals are consumers. All are victims and all are predators, and it is that cycle that keeps the chain intact. It is a fragile balance, but one that is adaptable and relentlessly dedicated to survival.

Whether you are a fisherman photographer, or simply a watcher of wildlife, there are few better places to observe a natural system that is so intense and self-sufficient. I still have my tenth-birthday microscope, and whenever I get the feeling that mankind is somehow unique in the world of natural things, I go down to the pond and scoop up a bit of algae. At 100-power magnification, I can see what unique really is. □



A silhouette of a hunter in a hooded jacket, holding a rifle, stands in a field with bare trees against a sunset sky. The sun is low on the horizon, creating a warm orange and yellow glow. The hunter is positioned in the center-left of the frame, facing right.

# Hunting Ethics,

## *A Sportsman's Challenge*

*Is the hunter accountable to his sport,  
to the wildlife and to the non-hunting public?*

*by Captain James N. Kerrick*



The hunter is not as free today to act without ethical restraint as he might have been 100 years ago. He is accountable to his sport, to the wildlife that sustains his hunting, and to the non-hunting public. I sometimes think that whatever the future holds for the hunter, he deserves. He's probably going to get what's coming to him; whether that is good or bad depends largely on him.

In its simplest terms, the sport of hunting must operate on two principles: (1) that the act of hunting does not jeopardize the existence of any wildlife species, and (2) that the act of hunting shames neither hunter nor the animals that he hunts. Professional game managers have been preoccupied with the first principle, and have tended to neglect the second. Yet, if either of these principles is violated, the act of hunting is insupportable. What can we do to strengthen these principles in the future?

Biological game management, based on good research and good enforcement of such management, is the beginning. This is basic, as is a solid information-education effort. Then comes the big problem of conducting good public programs.

The best answer is training and certification of all new hunters. Actual safety training is only part of this and perhaps a minor part. Equally as important is education in the principles of game and fish management, and in the fundamentals of ethical hunting. If there's a grassroots effort that holds more promise than this one, I surely don't know what it would be. It is important to recognize that it is not so much hunting *per se* which is on trial; rather, the conduct of the individual hunter is at the heart of the issue.

The weak point is the availability of qualified instructors. Such people not only must be hunters who know guns and shooting, but they also must be able to convey the essence of wildlife conservation and hunting ethics—and make it stick. It's a tough job to find and recruit such people and furnish them with good materials. But it must be done.

To make things even tougher, there may be a critical time element.

A lot of us didn't begin hunting with a ready-made set of ethical guidelines. I certainly didn't. Anything that I know about ethical field behavior, and ethical attitudes toward wildlife, has taken me 50 years to

learn. Now we can't just leave it to chance and let our hunters "jes grow," like Topsy. We've got to give the young hunter a running start, a working knowledge of gun safety and conservation. And above all, we must instill in him a bitter intolerance of slob hunting. The staunch anti-hunters won't give us much time to do this—they want the sport of hunting (and our state fish and game departments) abolished *now*.

*"Hunters have done more than any other group to protect and preserve wildlife. In the early 1900's there were 500,000 whitetail deer. Today there are over 11,000,000."*

Ethics is a fancy word which many people associate only with medicine or law or some philosophic essay by a long-dead Greek. The fact is, ethics are principles, or disciplines, which everyone uses every day. Let us look behind the word for a moment.

Ethics is the discipline dealing with what is good and bad, right or wrong, or with moral duty or obligation. So ethics are our own set of rules for our own conduct. It is not at all strange, then, that sportsmanlike conduct is said to involve fair, honest rivalry, courteous relations, and graceful acceptance of results. To go just one step further, we could say that the ethical hunter is a sportsman; and the sportsman who hunts is an ethical hunter, or he does not deserve the title "hunter." It is probably fair to say that there are no sportsmen except practicing sportsmen. The sportsman shows his true colors in what he does, not just in what he says. Because he respects wildlife, his hunt is fair, honest rivalry with the game he seeks. His attitude is graceful acceptance of the result, even if it is defeat. This is the sportsman—one who can respect himself.

Only 20 years ago the hunter would

have thought it unbelievable that he and his sport would soon be under fire by anyone, especially by those who say they speak for conservation. But it has happened and the trend is growing. Whether it's called conservation, preservation or just plain anti-hunting, it all means the same thing. And it is well known by the true conservationist that those who speak against hunting don't know what conservation is all about.

The hunter is not completely without fault, however. There are poor sportsmen in hunting just as there are in any sport. There is no question that the indiscriminate killing of game is wrong, and that poor sportsmanship and bad field manners greatly affect what people think about hunting. However, the thing most frequently overlooked by the hunter is the necessity for him to fully understand his role and contribution to the field of conservation. And he must tell others about it.

Hunters have had more influence on the conservation of America's outdoor landscape than any other segment of our society. The sportsman has been making a contribution to this nation's outdoors since its beginning, blazing the trail for the far-sighted conservation programs he still supports today. He has been in the forefront of nearly every worthwhile conservation movement for over 85 years.

It was the sportsman, the hunter and angler in search of serenity and recreation in the outdoors, who first saw the ill effects of expanding civilization. They saw the ravages of forest fire and soil erosion, the destruction of habitat and wildlife, and the pollution of our streams. Hunters approached these problems with the same patience and perseverance of the hunt. But they didn't stalk their goals in silence; they made plenty of noise.

Hunters set up a cry for public conscience, but the public wasn't ready for action yet. They felt there was plenty of room for the expanding population, even considering the shrinking countryside. In the meantime, sportsmen at all levels took up the battle on their own, establishing state fish and game agencies, pushing for conservation legislation, policing their own numbers to preserve their sport.

This is especially important today. Shorter work days, shorter work weeks, increased vacations and holidays, will be sending increased



numbers of people out of the cities in search of elbow room. In the years ahead, as competition for open space increases, it is important that the general public be aware of the stake that the American hunter has in the outdoors and the vital role the sportsman has played in preserving this land for the mutual benefit of the hunting and non-hunting public alike. Hunting is an extremely emotional issue surrounded by misinformation and name-calling.

Hunters have done more than any other group to protect and preserve wildlife, e.g., antelope, ducks, geese.

In the early 1900's there were 500,000 whitetail deer. Today there are over 11,000,000. There are 796 species of birds in North America. Hunters are largely responsible for laws allowing only 74 species to be hunted.

Virtually all of the taxes paid on licenses, firearms and ammunition, to date over \$3 billion, has been spent on fish and game programs, much of which is scientific management of wildlife, game and wildlife preserves and salaries of state fish and game department personnel and law enforcement officials who protect game and non-game wildlife. If hunt-

ing were stopped in America, the status of wildlife would become a hopeless, pathetic situation. We would end up with two realities—starvation and disease.

Hunting in itself instills a oneness with nature, and hunting builds a close bond between hunters of all ages throughout the world. Most important, hunting provides the companionship of father and son together.

Typical anti-hunting comments are that hunters pay fees to hunt and kill for the joy of killing; that hunters have the power to decide an animal's destiny, that hunters kill because of a need to kill, not as a sport; that hunters destroy wildlife and land. Other opinions: guns kill children; do not let youngsters hunt, guns increase the crime rate, stop the sale of all guns, hunters are cold-hearted people who lack humane feeling; only the rich can afford to hunt; it would be fair for all to abolish hunting; hunting is nothing but an attempt to prove masculinity by marching through the woods, blasting at helpless animals, and leaving them, injured, to die; hunting creates extinction and endangerment of wildlife species.

These comments indicate that the negative attitude of these people is directed toward the hunter and not hunting in general. Why? Because they close their minds to the reason hunters hunt; they do not really have an awareness of what the sport of hunting is all about.

If the negative attitude toward hunters is ever to be altered, the job must begin with the hunters themselves, whose most effective approach to turning around feelings of anti-hunters is education. How can this be accomplished? By banding together on local, regional, national and international levels. By forming clubs, organizations and associations whose primary function is to speak with and at those who oppose them. By providing them with the facts, backed up by statistics, which relate the positive impact of hunting on the game and non-game wildlife. In effect, what must be accomplished, if hunting is to survive on a long range basis and thereby avoid elimination and depletion of wildlife, is to turn so-called preservationists into believers. Once they believe, they can usually be convinced to contribute their time, effort and dollars toward the objectives they share with hunters. Only then will they realize our objective is the same—conserving wildlife and its natural habitat. □



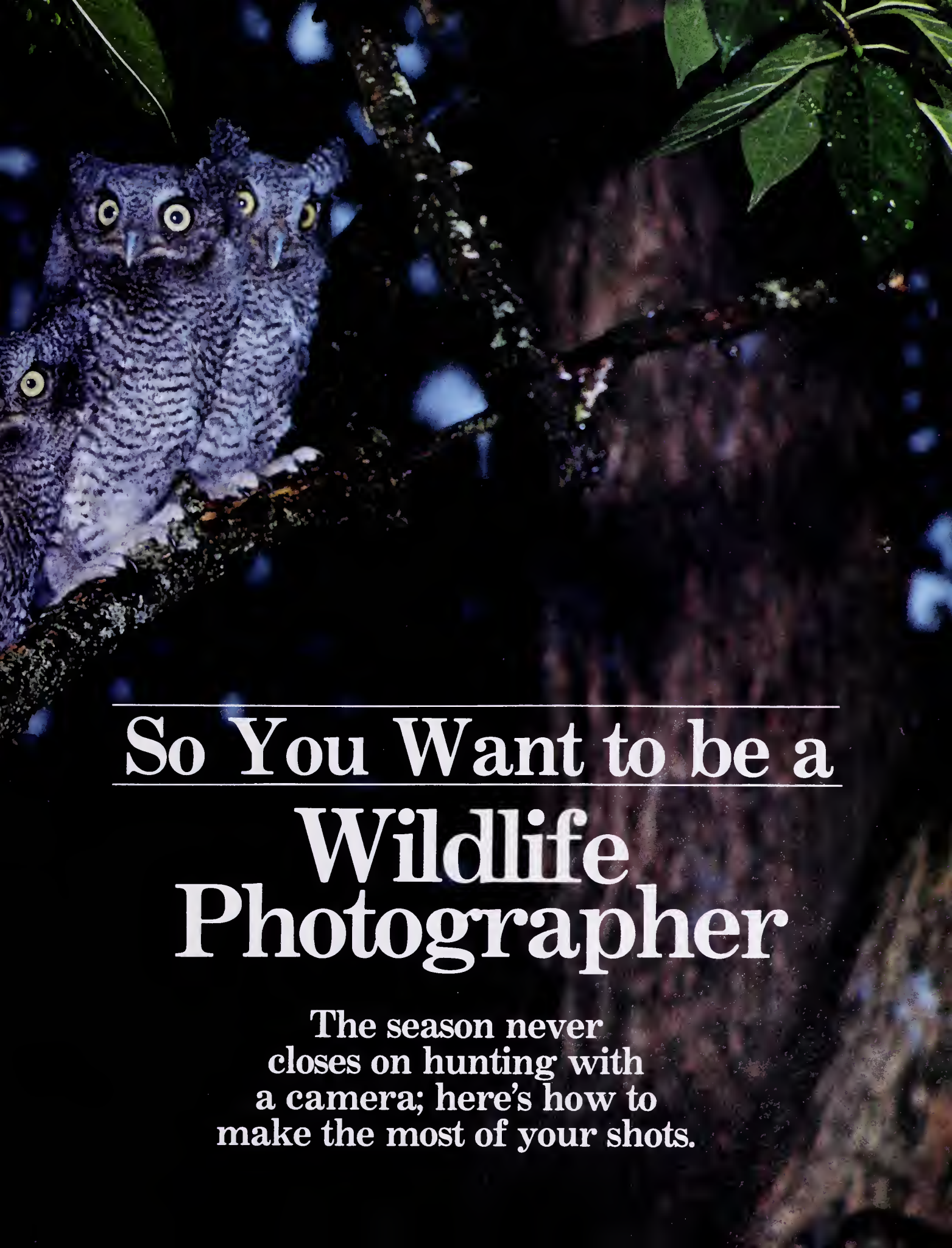
Steve Maslowski



A photograph of two young owls perched on a tree branch at night. The owls have dark, mottled feathers and large, bright yellow eyes. They are looking towards the left. The background is dark with some blurred light spots, possibly from other branches or foliage. The text "story & photos by Richard Simms" is printed in white at the bottom left of the image.

story & photos by Richard Simms





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# So You Want to be a Wildlife Photographer

The season never  
closes on hunting with  
a camera; here's how to  
make the most of your shots.



**T**he duck fluttered into the decoys without warning. It's happened to us all: when you least expect it, there they are. Charlie grabbed his gun and it wasn't until the last second that I remembered I had a camera in my hand. I whispered for Charlie to hold up until I set my light meter, but the way his feet were twitching, I could tell that I didn't have much time. Charlie jumped up, the duck leapt for the sky and the camera went to my eye all in the same instant. Everything was a blur, but I managed to click the shutter a half-second before Charlie's gun boomed. The next picture was of Charlie retrieving a hefty greenhead.

Although it was somewhat accidental, it was one of my first attempts at wildlife photography. It was one of those rare days that I managed to squeak out a limit early. It was a good feeling just to sit back and watch for a change. Taking out my camera was really an afterthought. Although I carried it often, it was usually used only to take pictures "after the fact," so to speak. You've seen those photo albums before; "Here's Joe with four dead ducks, here's Joe with four more dead ducks, here's Joe with a dead fish, etc."

After Charlie returned to the blind with his duck, I commented about his quick reaction. We often allow ducks to land in our decoys and then flush them before shooting. This allows for easier identification (important with a point system) and results in fewer crippled or lost birds. However, in this particular case, it seemed that the greenhead was only a few feet off of the water when Charlie made the shot. But when the picture returned from the printer, the duck was at least thirty or forty feet high, and that was before the shot came. It was obvious that the camera was quicker (or smarter) than the eye and it was easier to understand why descriptions of various hunting experiences differ from one person to another. Things happen fast! Whatever the case, I was intrigued with the experience and anxious to try again.

Now don't be too impressed—although my expectations had been high, it wasn't a particularly good photograph. I guess everyone who is even remotely interested in wildlife photography has had a similar experience. You happen upon a bird or animal that appears to be right in your lap but, when the picture returns, the critter appears as a mere speck in the distance. Ergo, many people think that all you need to take super-duper wildlife photographs is a super-duper telephoto



*With a good 300mm lense, a snow goose like this is easier to photograph.*

lens. Unfortunately, this is not necessarily the case. Before explaining why, let's discuss basic equipment requirements.

Obviously, a camera with interchangeable lenses is a necessity and 35 millimeter (mm) cameras are the format of the day. They are small, flexible and the quality and selection of 35 mm films is excellent. While they are not cheap, neither are they as expensive as one might think. A good quality 35 mm camera can be had for as little as \$150. A hefty price, but if it's taken care of, it can provide a lifetime of enjoyment. And photographs enjoyed for generations to come.

**L**enses are favorite items of discussion among photographers. Be assured that there is no such thing as "the perfect lens." It is totally dependent upon your personal wants, needs and prefer-

ences. To avoid writing a complete book on the subject, I will simply give you my preferences as a reference point. Ten other photographers might have 10 different preferences for perfectly good reasons.

Your first choice when you buy your camera body should be a 50 mm macro lens. All 35 mm cameras you price will usually include a standard 50 or 55 mm lens but rarely, if ever, will it be a macro lens. The macro lenses allow you to take extreme close-ups while the standard lenses will allow you to get no closer than 1½ to 2 feet from your subject. The macro feature allows me to take photographs of lures in a fish's mouth, flowers, insects, etc. If you have no desire to take photographs of such things, scratch the macro feature.

The second lens you purchase for wildlife photography should be a medium length telephoto lens such as a 110 mm or a 135 mm. Although these aren't what I consider optimum lenses for wildlife photography, they are very useful and provide excellent training before stepping up to a larger telephoto lens.

**W**hat many people don't realize is that telephoto lenses can drastically reduce your available light and are often difficult to hold steady, much like looking through a pair of high-power binoculars. Of course, wildlife is most active during periods of low light. Since most telephoto lenses don't allow as much light to reach the film, you must use a slower shutter speed. The result is often blurred photographs because, while the telephoto lenses do magnify the image, they also magnify movement. Therefore it takes some practice to learn their limitations and how to work around them. The medium length telephotos are excellent starting points.

Next on the list (remember we're talking primarily about wildlife photography) is a 300 mm telephoto lens. This is what I consider the optimum lens for wildlife photography. While it is strong enough to provide good magnification, it is not so large that it can't be handheld (used without a tripod) provided you have good lighting conditions. As a general rule of thumb, you shouldn't use a shutter speed slower than the focal length of your lens. For example, a 135 mm lens can usually be handheld down to 1/125th of a second. I can usually handhold a 300 mm lens down to 1/250th of a second. However, it is much like shooting a rifle in that a smooth trigger/shutter release is impor-



tant as well as good breath control. Now, as I mentioned earlier, don't be lead to believe that a 300 mm lens is the answer to all your problems because, it ain't so! To take a full-frame photo (vertical 35 mm) of a whitetail deer with a 300 mm lens, you must be within 35 yards. That's close! A full frame shot of a songbird requires that you be within 13 feet! Of course you can buy larger, higher-priced telephoto lenses but you may further restrict your light capabilities and maneuverability. So what's the answer? You've still got to get close to your subject, even with a telephoto lens.

I'm often asked my opinion on telephoto zoom lenses. My standard answer is, "I don't like them," although I will readily admit that under certain conditions a good quality 80 - 200 mm zoom lens would be quite handy. Generally, zoom lenses do not yield the picture quality of a fixed focal length lens unless they are used at the smaller f-stops (f/8 or smaller). That requires a great deal more light and/or a steady hand.

Film selection is another oft-discussed topic. And again, even though I know you're tired of hearing it, film choice is a personal decision. Prints or slides, color or black and white, high speed or low speed—all are choices which depend strictly on your needs.

If you intend to sell your photographs for publication, Kodachrome transparencies should be your first choice. However, Kodachrome is a slow speed film and can be difficult to use under low light conditions. The higher speed Ektachromes provide greater flexibility but are second choice to most editors. Also bear in mind that Kodachrome usually enhances warm colors (red and oranges) while the Ektachrome films yield stronger cool colors (blues and greens). This can work for you or against you depending on what you want as a final product. For example, Kodachrome brings out the warm colors especially prevalent in later afternoon light or in fall color photographs. The warm browns of deer and raccoons record very accurately on Kodachrome. On the other hand, Ektachrome may be particularly suited to cold winter-time photos. Waterfowl against blue or green water or against a blue sky can be especially striking on Ektachrome.

If you primarily want photographs to show your friends or hang on the wall, print film should be your choice. You can have prints made from slides but the costs are high and quality isn't



*A macro lens will allow you to be eyeball to eyeball with a toad.*

*Can you stalk a great blue heron? The author did, and got this great shot.*





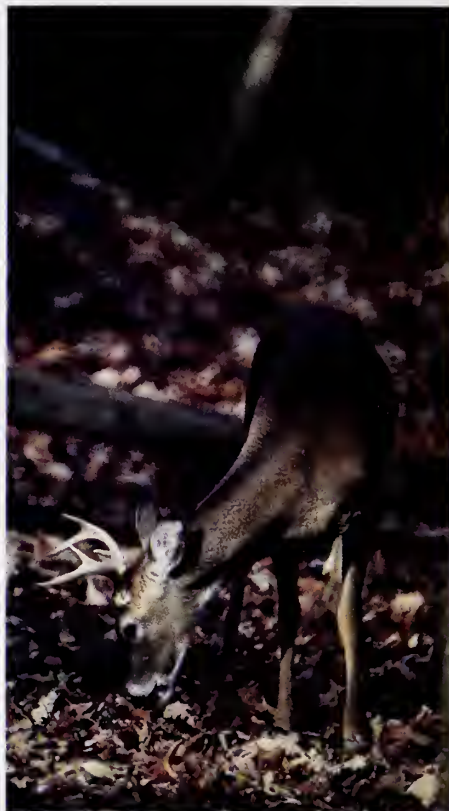
as good as it might be otherwise. Obviously the choice between color and black and white film should be an easy one. Almost everyone prefers color but the challenge of taking a black and white photograph that will make people sit up and take notice can be fun. Black and white is also less expensive and therefore good to practice with in the beginning.

**M**any people really don't know the difference between the high speed films (i.e. 400 ASA) and lower speed film (i.e. 100 ASA). Without getting too technical, the high speed film doesn't require as much light to be exposed. Therefore you can take photographs under relatively low light conditions where you might not be able to with a slower film. So why isn't high speed film better? The final quality of photographs taken on high speed film is generally poorer. The contrast is higher (differences between light areas and dark areas) and the photographs are sometimes grainy (fuzzy). The graininess may not be readily apparent on a standard 3½ x 5 print but if the photograph is enlarged to an 8 x 10 or larger it will be very apparent. Likewise, if the photo is a slide to be used for publication, the graininess will become evident after it is printed; this may cause an editor to reject what you think is a good shot. So you see, it's a trade-off whichever way you go. My preferences are for the slower speed films whether they be prints or slides, my logic being that if there isn't enough light to shoot with a slower speed film, it probably isn't going to be a very good photograph anyway.

What do you need besides a camera and film? If you have a good idea where your subject is going to be, such as a deer on a particular trail or birds at a bird feeder, a tripod or monopod can be a tremendous asset. The steadiness of a tripod will allow you to use a slower shutter speed, therefore shoot in lower light or use a slower speed film. But try to photograph a duck winging its way across the decoys, or a mink making its way alongside a stream, from a tripod and you will know the true meaning of futility. The best answer in this case is a body brace or a gunstock mount for your camera.

Last but not least, when your budget allows, I would suggest the purchase of an autowinder or a motordrive. This isn't to say you should push the button and let the film roll through the camera like bullets through a machine gun. But, compare your camera to a bolt

action rifle. Every time you shoot you must pull the gun down and feed another bullet into the chamber, or recock the camera, as the case may be. With a motordrive, the camera need never leave your eye. Therefore you're always ready when that perfect instant arrives. More often than not, the second photograph taken of a bird or animal will be the best. A deer feeding along rather nonchalantly hears the camera click. The first reaction will be to throw its head up in search of the odd noise. This photograph, one of an animal or bird alert and poised for flight, will usually be your best. Without a motor-



*Getting close to an animal for a photo can sometimes be better than using "long" lenses.*

drive you'll usually be winding the camera when this occurs and by the time it's back to your eye and refocused, the critter is headed for parts unknown.

**O**kay, we've got our basic equipment in order. Where do we go from here? Learn all about your subject. Before you can take a picture of a deer, quail or rabbit you have to know where to find a deer, quail or rabbit. Obviously hunters have a distinct advantage in this department. In fact, a hunting trip can be an excellent time to pursue your photographic urges. Anytime a hunter

is afield, odds are he will encounter a variety of furred or feathered beasts besides those which he may be pursuing. How many times have you heard someone say, "Boy, I wish I'd had a camera yesterday when. . .!" The best way to avoid this is to keep your camera with you all the time. And I do mean all the time! Every good photographer I know is never much more than an arm's length from a camera, whether he's at home, in the car, or easing down the river in a canoe. Keeping a camera close at hand should become second nature, much like keeping up with a pocketbook or your car keys. A simple way to do that is to purchase a camera holster. These attach to your belt and hold a 35 mm camera just as if it were a pistol in a gun holster. These can be had for around 15 dollars. This and your camera equipped with a medium length telephoto lens means a picture is never further away than your belt. Unfortunately I sometimes neglect to practice what I preach. Numerous are the photographs I've missed due to laziness, but one in particular stands out in my mind. Building a duck blind one morning about 9 a.m. (no, we didn't oversleep but had worked all night), my friend and I ignored something splashing behind us, thinking it was the retriever running off some energy. Finally I turned to see an exquisite eight-point buck wading chest deep toward us. Apparently he was concerned about the retriever, because he kept looking toward the woods, never noticing us. He spotted us when he was about 15 yards away and began to bound through the water in tremendous leaps. The sight of that buck, bounding off with huge splashes, backlit by the morning sun was absolutely awesome. It was one of those sights you think you'll never see except in a painting. There was, or would have been, ample time for photographs had my camera not been at home.

**L**et's assume you do not hunt. For the beginning outdoorsman there are a couple of places to start. If you have no particular aversions to hunting, ask a hunter to take you along on his next outing in exchange for some good documentary photos. Keep in mind that you may have to swear on your mother's grave never to reveal to anyone his favorite spot. Hunters and fishermen are a protective lot.

Also, every state has a number of state or national parks, wildlife refuges and public lands available for use with reasonable restrictions. A phone call to





*In parks and refuges wild animals have often adapted to the presence of people and shots like these are possible.*



your local conservation agency or park service is another excellent way to begin your search. Unfortunately some people visit such parks or refuges expecting to find an animal behind every tree or a bird in every bush. Even in areas with extremely dense wildlife populations, animals can be difficult to locate. Many animals, such as raccoons and foxes, are primarily nocturnal and even those that aren't nocturnal usually restrict their movements to early morning and late afternoon. Now none of this is intended to dissuade you, only to illustrate that the beginner must do some background research and plan on spending more than a few hours afield learning the habits of wildlife.

**O**f course, one of the best places to get started in wildlife photography is in your own back yard. No matter where you live, you can usually attract a few songbirds to a feeder and the folks who live in rural, or even some suburban areas, may have an abundance of wildlife "out back" or "just down the road apiece."

The first thing to know about wild animals is that they all have what is known as an "approach distance." This is how close they will allow a human to approach before they take cover or flee. It varies with each species and often with individual animals. Obviously it's easier to get close to a sparrow than it might be a hawk. In some areas, particularly the parks and wildlife refuges, animals have adapted quite well to the presence of humans. You might be able to sneak or even walk within a few yards of many animals.

Oddly enough, some of my better wildlife photographs have been taken while I was fishing! It seems that while most animals or birds fully expect danger to approach from the ground or air, very few expect it to approach from the water. I have drifted or trolled within feet of deer, ducks, owls, muskrats and a variety of other wild animals while in a boat, where normally they would flee at the mere sight of a person. On one occasion, a friend and I followed a mink alongside a stream for over an hour. It was a rare occasion indeed, as mink are usually nocturnal and extremely wary. But, we repeatedly approached this one within 10 or 15 feet and were virtually ignored. We also learned that mink feed at a very rapid pace! The only time it paused from its constant search through the roots, water and rocks was on the two occasions that it captured small fish. Then it would retreat into the woods to



feed in solitude, only to reappear shortly to resume its fast-paced jaunt along the stream.

**A**nother extremely efficient method for taking wildlife photos, although not very glamorous, is from your car. In the age of the automobile, animals have been forced to adapt to roadsides and vehicles. In many cases it is quite simple to stop your car and shoot photographs from the window. Usually if you try to step from the car, the animals will flee. More often than not, they will tolerate you from the car. Many photographic retailers have camera mounts that actually clamp to a window pane just for that purpose. A towel resting over the top of the window pane will also work well, but remember to stop the car engine to reduce vibrations that could result in a blurred picture.

Baiting is another excellent method to use but it can have drawbacks. It can be expensive unless you have your own supply. Although it can be very effective in attracting birds or animals you have no way of controlling when they visit your bait site. In some cases they may choose to partake of your bait in the dark of the night. Also, if there is an ample supply of natural food available, wildlife will probably prefer that over your bait.

Baiting is perfectly legal for photographic purposes in most situations. However, keep in mind that it may make some animals particularly susceptible to illegal hunters. Or, since baiting is not legal for hunting under most circumstances, you may render someone's hunting area illegal by placing bait there.

Don't make things difficult for the game warden—or you—by having your shotgun in the car; if you're going to use bait, leave *all* hunting paraphernalia at home. If you really want to play it safe, get in touch with the game warden in the area you'll be photographing, and let him or her know what you're doing in advance. This will prevent misunderstandings later.

The most common vision of a wildlife photographer is one of an aged, bearded mountain-of-a-man crouched much like an animal himself in a crudely constructed blind waiting for hours, if not days, for his subject to appear before his lens. Such may be the case for someone, somewhere but not for me. I know from experience that it works and works very well but it takes patience and can be quite boring. I personally prefer the stalk, pitting myself against the six senses of a wild animal

in his environment. And, if I pick my times and places right, my chances of getting good pictures are excellent. Nor am I bound by seasons or limits—photography is open year-round.

Okay, somehow you've managed to walk, crawl, stalk or swim within range of a wild critter, now what? Remember that whether you're taking pictures of people or animals, the eyes are the mirror to the soul!

If you can't see an animal's eyes, don't waste your film. Unless, of course, you are attempting to illustrate a fleeing bird or animal. But even then, a broadside shot where the eyes are still visible is preferable.

Consider the possibility of taking a picture of a snake stretched out on a limb. If you're three feet away from his nose, obviously you can't get all three or four feet of the snake in focus. But, if the eyes are in focus, nothing else matters. Also, as you're watching an animal's eyes, you will often notice a glint or what's known as a "catch light" in the eyes. This is very important in drawing attention to the eyes, and therefore, to the photograph.

In most cases you want to be on the same level as whatever you are photographing. If it's a picture of a snake in the grass, get down on your belly in the grass to take the picture. If it's a picture of a bird or a squirrel in a tree, you try to get in a tree with him. Obviously this won't always be possible but you'll be surprised how often it is. Always be looking for anything that will set your photographs apart from everyone else's. Whether it's a unique angle, special lighting or an unusual bird or animal, there's always something that can make your photographs special if you use some imagination.

**Y**oung birds and animals are often as curious about you as you are about them. But be extremely careful that you don't harass them. Take your pictures quickly and never touch the creatures or pick them up. Remember that their parents are probably nearby resting, feeding or just waiting for you to leave.

Nesting birds also make good photographic subjects. One trick professionals often use is to make a fake camera from cardboard and place it on a tripod near the bird's nest. Each day, the tripod is moved closer to the nest until the birds are used to the contraption and it is in the position you want. Thereafter you can replace the fake camera with a real one. Manual cable releases 30 to 50 feet long are readily available

for most cameras and are relatively inexpensive. Attach one of these to your camera and you can shoot photographs at your leisure from a nearby hiding place.

**T**he same year I took that first "wildlife" photograph mentioned at the beginning of this story, I learned another valuable lesson. Shortly after the duck season closed I decided to get serious about my photography. Besides, it was a good excuse to go sit in the duck blind without everyone thinking I'd gone totally bonkers. I went the whole route, including carrying in a dozen decoys, rebrushing the blind and stomping through the pond to break ice in far-below-freezing temperatures—all this long before sunrise, of course. Unfortunately you won't see any of the photographs I shot that day published here. Don't misunderstand, the ducks showed up. In fact they appeared en masse, as they will always do shortly after the season closes. By the time it was light enough for the light meter on my camera to give me any kind of reading, there was a virtual blanket of waterfowl across the pot hole and surrounding ice. I had been quite concerned about not owning a telephoto lens but there were more than enough ducks to fill the frame of my standard lens with no problem. . . except one. The first time I snapped the shutter, it froze. . . literally.

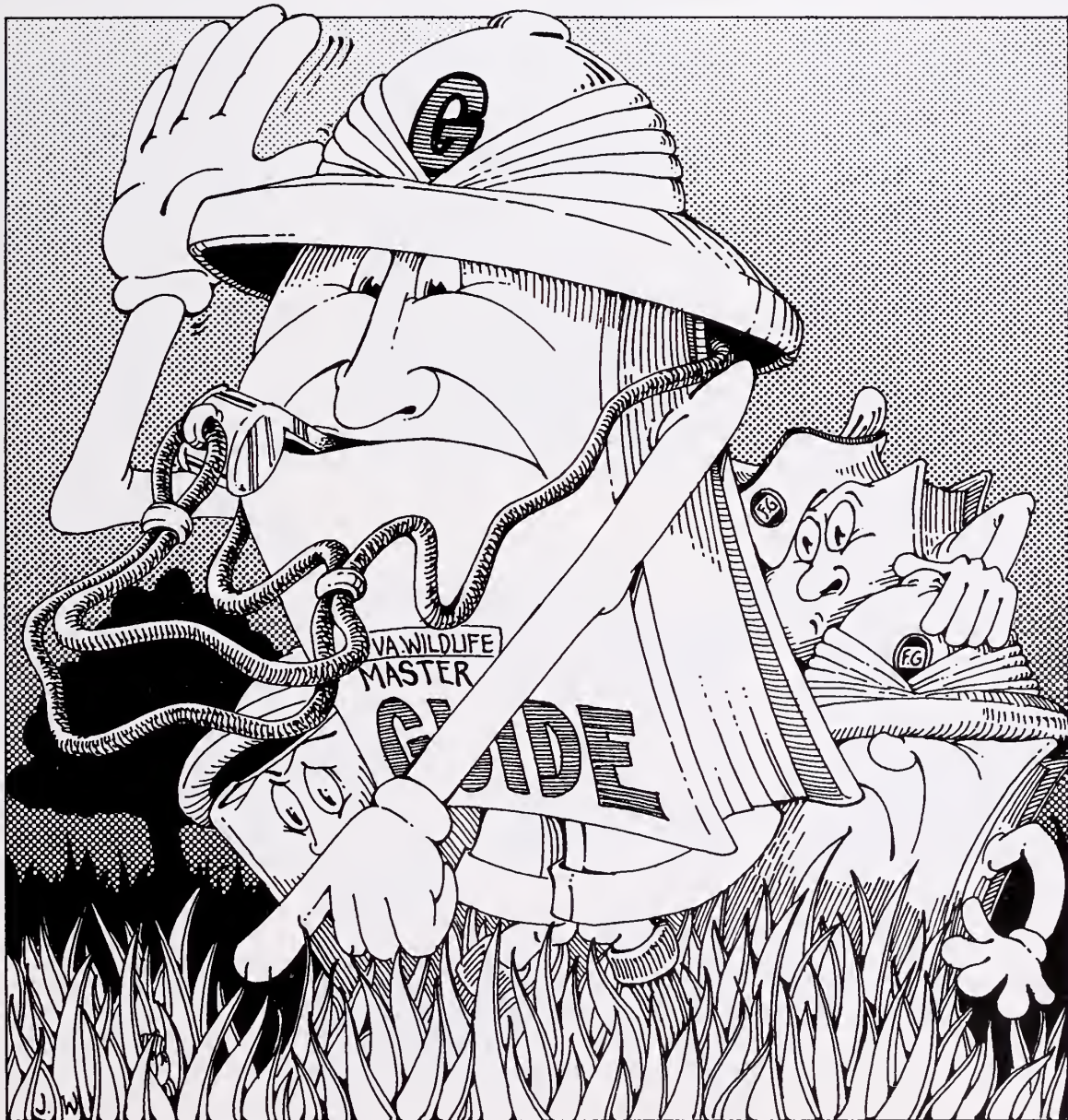
Lesson number one: never expect your camera to operate under less-than-optimum conditions unless it is well maintained. I had owned that camera for some time. It apparently was not well maintained and had accumulated enough dirt and grim to allow condensation to form and freeze in the winter temperatures. The repairman, after giving the camera a thorough going-over, asked, and I quote, "You been to Viet Nam with this thing?" Since then I have learned the difference between use and abuse and keep my cameras well maintained, including routine cleanings by a qualified serviceman.

Wildlife photography is a fascinating proposition for the young or old, hunter or non-hunter, or the beginning or professional photographer. It's impossible to tell a bird or animal how to pose, so it's strictly up to you to figure out how to get the shot you want. It's an exciting challenge that holds everlasting rewards for those with the perseverance to make the effort. So, get out your camera, unleash your imagination and go take some "wild shots!" □



# A Guide to Field Guides

by Gregory Mertz  
illustrations by Jack Williams





# The field guides now available cover virtually every aspect of the outdoors; here's an article to guide you through them.

**T**he field guide is one of the most important tools of the nature lover and the outdoor enthusiast. It is the authoritative source for finding out and knowing what is what in the wild.

Most people have a favorite field guide, one that goes with them on every outdoor foray. For me, it is *A Field Guide to Wildflowers* by Roger Tory Peterson and Margaret McKenny. I value it first as a field guide although I have used it for everything from a step to see into a birds' nest to a projectile to throw at squirrels who were stealing my lunch. Its margins are filled with notes about my outdoor trips and journeys. On occasion I leaf through my guide and remember not only flowers, but places, friends, and special days.

Field guides were once easy to choose. There were only a few on the market. In the last 10 years, though, both authors and publishers have discovered their popularity. Simon and Schuster, Harper and Row, Alfred A. Knopf, Golden Press, Dover Publications, Doubleday, Houghton Mifflin, Random House and other publishing houses are all marketing field guides.

There are now almost 200 guides on the market that identify and tell about the natural history of the eastern United States. Some of these guides are good, some are not.

Below is a list of some of the best, with a note or two about their good and bad points. Because of space limitations the list includes only field guides that classify living organisms

and those that address the whole geographic region of the Northeast and Mid-Atlantic states. Exceptionally good guides are marked with an asterisk (\*).

## Birds

*A Field Guide To Hawk Watching In North America* by Donald S. Heintzelman; Pennsylvania State University Press, University Park, Pennsylvania, 1979. Only 35 species; excellent photographs of birds in flight and perching; field size.

\* *A Field Guide To Birds of North America* by Roger Tory Peterson; Houghton Mifflin Company, Boston, 1980. The edition is one of the best field guides ever; field size; durable.

*An Audubon Society Beginners Guide of Birds of North America* by George S. Fichter; Random House, New York, 1982. Shirt-pocket size; elementary; good for children; inexpensive.

*Audubon Society Field Guide To North American Birds—Eastern Division* by John Bull and John Farrand; Alfred A. Knopf, New York, 1977. Generally a good guide; some photographs difficult to use for identification; field size; durable.

## Grasses

*Field Guide To The Grasses, Sedges and Rushes of the United States*, by Edward Knobel, (1899); Dover Publications, Inc., New York, 1977. Complex but good; drawings very good; inexpensive; field size.

*Grasses—An Identification Guide* by Lauren Brown; Houghton Mifflin Co., Boston, 1979. Good; durable; good drawings.

## Insects and Spiders

*A Golden Guide To Spiders And Their Kin* by Herber W. Levi, Golden Press, New York. Best guide for spiders, but general; pocket size; inexpensive.

*Audubon Society Field Guide To North American Butterflies* by Robert Michael Pyle; Alfred A. Knopf, New York, 1981. Very good photographs; good visual classification; covers some eggs and caterpillars; field size and durable.

*Audubon Society Field Guide To North American Insects and Spiders* by Lorus and Margery Milne; Alfred A. Knopf, New York, 1980. Perhaps best guide for insects, but subject is so large it is impossible to do it justice; excellent photographs; field size and durable.





## Non-Flowering Plants

*A Field Guide To Ferns and Their Related Families* by Boughton Cobb; Houghton Mifflin Co., Boston, 1963. Very complete; excellent drawings; field size and durable.

*A Golden Guide to Non-Flowering Plants* by Floyd S. Shuttleworth and Herbert S. Zimm; Golden Press, New York, 1967. Best field guide for mosses; ferns and fungi better elsewhere; pocket size; inexpensive.

*Mushrooms Of North America* by Orson K. Miller; E.P. Dutton, New York, 1977. Excellent photographs and organization; durable cover; field size.

## Reptiles and Amphibians

*A Guide To Field Identification of Amphibians of North America* by Hobart M. Smith; Golden Press, New York, 1978. Good organization and drawings; durable, field size.

*A Guide To Field Identification of Reptiles of North America* by Hobart M. Smith and Edmund D. Brodie; Golden Press, New York, 1982. Good drawings and organization; durable; field size.

\* *Audubon Society Field Guide To North American Reptiles* by John L. Behler and F. Wayne King; Alfred A. Knopf, New York, 1979. Exceptional photographs; very good organization and information; field size; durable.

*Field Guide To The Reptiles and Amphibians of Eastern and Central America* by Roger Conant; Houghton Mifflin Co., Boston, 1975. Excellent drawings; good information; field size; durable; organization a little complex.

## Trees and Shrubs

*A Field Guide To Trees And Shrubs* by George A. Petrides; Houghton Mifflin Co., Boston, 1972. Reliable and complete but complex organization; field size; durable.

\* *The Shrub Identification Book* by George W.D. Symonds; M Barrow and Co., New York, 1963. Superb organization; excellent photographs; a four-season guide.

\* *The Tree Identification Book*, by George W.D. Symonds; M. Barrow and Co., New York, 1958. Superb organization; excellent photographs; a four-season guide.

## Wildflowers

\* *A Field Guide To Wildflowers of Northeastern and Northcentral North America* by Roger Tory Peterson and Margaret McKenny; Houghton Mifflin Co., Boston, 1968. One of the best field guides ever; organized by flower color; illustrated with drawings; durable; field size.

*Newcomb's Wildflower Guide* by Lawrence Newcomb; Little, Brown and Co., Boston, 1977. Excellent; highly accurate field guide but organized by plant and flower structure; excellent drawings; best used by experienced wildflower enthusiast; durable.

## Wildlife Including Mammals

*A Field Guide To The Mammals* by William H. Burt; Houghton Mifflin Co., New York, 1976. Good drawings; field size and durable.

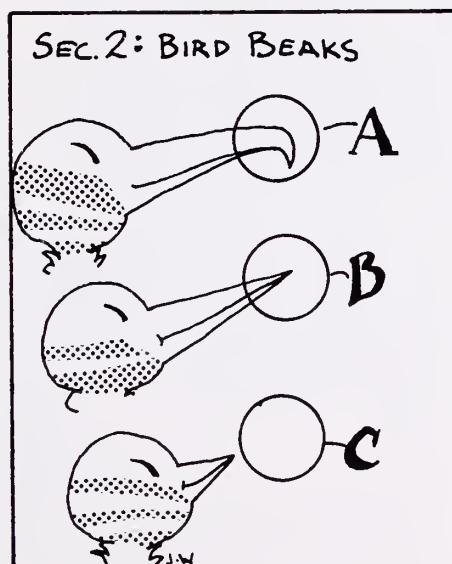
*Field Guide To North American Wildlife* by Henry Hill Collins; Harper and Row, 1981. Excellent general guide to mammals, birds, seashells, reptiles, amphibians, fish, etc.; covers over 1500 species; field size and durable.

*Reader's Digest North American Wildlife* edited by Susan J. Wernert; Reader's Digest Association, Pleasantville, New York, 1982. Although title refers to just wildlife, it covers trees, shrubs, mushrooms, ferns, mosses, mammals, birds, reptiles, amphibians, fish, and invertebrates; seems made for average American home; information and drawings a little too general; strongest feature is everything is in one place; too large for easy field use; durable.

## Miscellaneous

\* *A Field Guide To Edible Wild Plants Of Eastern And Central North America* by Lee Peterson; Houghton Mifflin Co., Boston, 1978. Excellent field guide; good drawings and organization.

\* *Common Marsh, Underwater and Floating-Leaved Plants of the United States and Canada* by Neil Hotchkiss; Dover Publications, New York, 1972. Excellent information; good pen and ink drawings.





# "The most important characteristic is accuracy. Names and facts need to be correct, but perhaps more important is the accuracy of the illustrations."

With so many new field guides on the market it can be confusing trying to decide which one to purchase. Selecting a field guide can be easy if several factors are kept in mind. Here are some of the features to evaluate.

## ITEM: Quick Identification is a Good Feature!



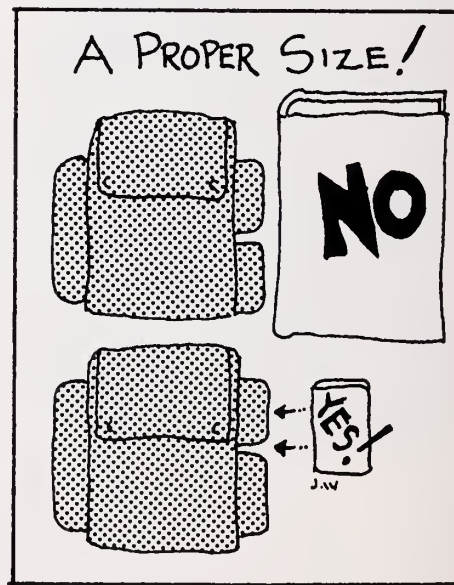
**Accuracy** The most important characteristic is accuracy. Names and facts need to be correct, but perhaps more important the accuracy of the illustrations. A drawing or photograph must allow you to match the actual species to what is in the book without leaving any doubts. There is controversy over whether photographs or drawings are better. Drawings allow the artist to highlight distinguishing characteristics, but the results are often too stylized. Photographs, however, are often confusing because identifying features are not prominently recorded. Body shape and form can be hidden by shadows and background and all too frequently photographs are out of focus. Before buying a field guide check a species or two that you know well. Do the facts, illustrations and keys measure up? Choose accordingly.

**Organization** Ease of use is also important. Check to see how the book is organized. Are the illustrations all in one place or do you have to leaf through the book to find them? Are species arranged by taxonomic family or by visual characteristics? The latter is generally preferred unless you are fairly experienced with the group. Do you have to work your way through a key before turning to an illustration or do the illustrations allow you to identify directly from them? Again, the latter is preferred.

**Size and durability** Is the guide comfortable in your hands? Will the book fit into a pocket or knapsack? Will it be a hassle to carry around? Will the book withstand rain, dropping and general wear and tear? These are all important questions to resolve.

**How specific is the guide?** Is a very detailed guide what you need? Or is a general one that covers many types of organisms satisfactory? If you like to know a little about everything, one of the larger, more inclusive guides might be best. Carrying one guide beats carrying 10; paying one price generally beats paying 10, too. If you are an avid and specialized hound, then more specific guides are probably better for you no matter how many you have to carry, or how much you have to pay.

**Price** Generally the price reflects the strength and durability of the bookbinding. It is less easy to compare the value of the information to the price. There are some incomparably good guides that are not built very sturdily and, as a result, are inexpensive. Still, they are good values because replacement is also inexpensive. In general, let the other characteristics determine which guide to buy. □





# -February Journal-

## Virginia Wildlife Editorial Sound Shots

"The way people are shooting at sounds these days, I'll be darned if I'm goin' to sit in the woods making noises like a turkey."

The above comment was made by an experienced hunter and with good reason. Believe it or not several people have been killed in Virginia's forests this year because someone shot at **sounds!**

Another hunter reported that he met a fella coming out of the woods one day, just as he was starting in.

"See anything?" asked my friend.

"Naw," said the hunter. "Just had a couple of sound shots."

My friend looked at this guy with unbelieving eyes as a cold sweat began to trickle between his shoulder blades.

I always thought stories about sound shots belonged with snipe hunts and the recipe for turkey track soup. But there are actually people out there who shoot at sounds.

They shoot at the scuffling sound made as something walks through the woods. They shoot at concealed turkey hunters trying to call up a turkey. They shoot in the spring as well as in the fall.

At first glance one would think that a good hunting safety course would educate folks not to shoot at sounds. This may be part of the solution. But many of these shots were fired by hunters who thought the sounds were made by deer while they were hunting during the bucks only season. Since bucks don't make sounds that are different from does, their philosophy must be, "Shoot 'em all down and sort them on the ground, and if someone gets in the way that's his problem."

Blatant disrespect for the hunting laws, let alone the rules of firearm safety, is at the root of many of these type of hunting accidents.

The shooter that shoots a calling hunter in the spring turkey season is shooting at hen sounds usually. Not only is he so poor a hunter that he thinks he can sneak up on a turkey, he's shooting into bushes from which

the calls of an illegal hen are coming!

How do we reach these people? Do we have to wait before they kill someone before we do something about it?

The odds are strong that your friendly local game hog or poacher is the same guy who'll pop someone just because he sounds like a turkey. Most hunters are inclined to look the other way when a fellow hunter does something illegal, but now we have a new light shed on this guy. He might be a good ol' boy, but is he also a potential killer? Shouldn't we pull his cork before he kills someone?

by John P. Randolph  
Assistant Director

## State Forest Stamp Now \$5

There has been an increase in the cost of a State Forest Hunting Stamp from \$1.00 to \$5.00. Jim Garner of the forestry office says the increase was needed to cover the costs of printing the stamps, then selling them through dealers. Ten percent of the money raised pays these sellers, and 25 percent of the funds go to the counties where the forests are located. Garner points out, it's been nearly 30 years since there's been any kind of increase in the stamp price. The net returns of stamp sales go to improve hunting, fishing and primitive outdoor recreation. Some projects already underway include clean up and access ramps for the Willis River, improved wildlife food patches, and a hiking access trail along one of the major streams in the forest. As more funds become available through the sale of the stamps, plans call for the completing of these project and the beginning of others such as building a swinging bridge over a river where there is no foot access to the forest, and the rebuilding of primitive picnic shelters built during the CCC days.

## About the Authors

**Bob Gooch** lives and works in Troy, Virginia. A member of the Virginia Outdoor Writers Association and the Outdoor Writers Association of America, Bob is a regular contributor to major outdoor publications. **Bill Cochran** is another active Virginia outdoor writer. Bill is currently the outdoor reporter for the *Roanoke Times-World News*. **Curtis Badger** now lives on Maryland's Eastern Shore and writes about that area's out-of-doors that he knows so well. **Captain James N. Kerrick** is the Game Commission's Sportsmen's Education Supervisor. **Richard Simms** was an award winning photographer and wildlife officer for the Tennessee Wildlife Resources Agency and is now working in television in Chattanooga, Tennessee. **Gregory Mertz** is a writer based in Needham, Massachusetts. □

## Maryland Saltwater Fishing License

Effective January 1, 1985, Virginia residents who fish in what is considered the Maryland portion of the Chesapeake Bay must have a valid Maryland saltwater fishing license. The license is available in Maryland through regular freshwater fishing license agents. So far, there are no agents in Virginia who sell the Maryland license. A regular saltwater license is \$5.00. If you have a valid Maryland freshwater license, you may purchase a saltwater stamp for \$2.50. A three day saltwater license can be purchased for \$2.00.

Virginia residents may apply for a Maryland saltwater license by writing to: The Department of Natural Resources, Licensing and Consumer Division, P.O. Box 1869, Annapolis, Maryland 21404. Anglers cannot send the money to them ahead of time because the license application must



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be filled out and signed.

Those exempt from needing the license are anyone under the age of 16 or over the age of 65. Anyone holding a valid commercial fishing license in Maryland. Anyone fishing on a charter boat or from private land with the owner (as guests, etc), those fishing from public piers and bridges *designated* as free fishing areas, anyone who is with a private boat owner who has purchased a \$25.00 boat stamp which exempts the boat owner and parties on board from the license requirement. □

## What's Your Attitude

The Non-Game Wildlife and Endangered Species Program has just begun its fourth tax year. Also known as the Non-Game Tax Check Off Program, Virginians have contributed over one million dollars in the last three years from their state tax refunds. The program is administered by the Virginia Game Commission for endangered species research and recovery programs, non-game wildlife inventory and investigation programs and for public awareness and education.

There are 23 endangered wildlife species in Virginia along with hundreds of non-game wildlife species and over six million people. The use of the fund that would be in the best interest of the wildlife species and the citizens of Virginia is one concern of the Game Commission. A Non-Game attitude study was funded by the Commission to find where priorities should lie concerning the use of the Non-Game Fund. The study was completed in September 1984. Mary Beth Moss and Dr. James D. Fraser from the Department of Fisheries and Wildlife at Virginia Tech in Blacksburg conducted the study.

In January 1984, over 2,000 Non-Game Surveys were mailed to ran-

domly selected households around the state and to 400 known contributors to the program. The survey was in the form of a nine-page questionnaire. Included were general questions such as: "How far would you drive to see wildlife?" and "Do you have any feeders, birds baths or wildlife food plants in your yard?" Whether the participant agreed or disagreed with several statements about wildlife management or issues. Another group of questions asked respondents to allocate by percentages the amount of the budget that should go to endangered species, non-game wildlife research, education, and wildlife viewing areas. Finally personal questions were asked. How long the person had lived in Virginia? How did they find out about the program? The response rate from the questionnaires was 56 percent of those who were asked to participate.

Virginian's and the Game Commission both agreed that the main priority of the program should be endangered species management. Persons across the state gave endangered species a high allocation of the total budget. The Game Commission has given priority to those species which are on the endangered species list. The non-game fund has been able to receive matching funds from Pittman-Robertson and Federal Endangered Species Program to help. As with the first priority the Commission and citizens also agree that non-game wildlife inventory and investigation programs should be the next priority of funds spent and public awareness, education and wildlife viewing areas the third priority according to the survey. Because of availability of matching funds and cost differences in implementing the non-game programs, the contributions may not have been divided as suggested by the person completing the surveys.

Other results of the program showed that many Virginian's (96 percent) watched wildlife in their yards and 94 percent watched wildlife in areas other than their yard.

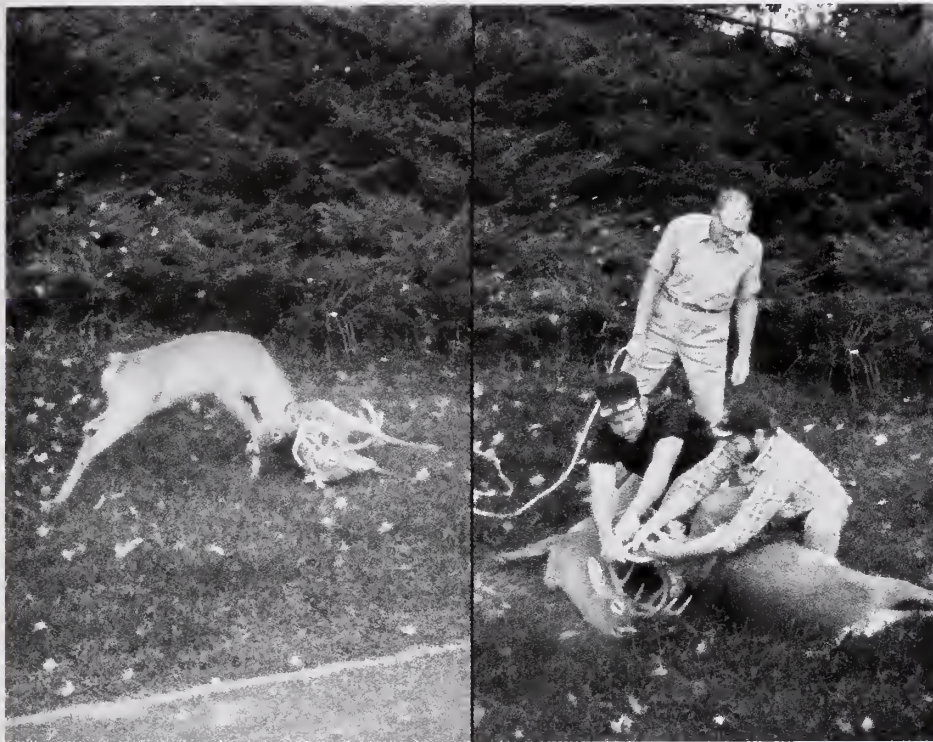
They also enjoy feeding wildlife in their yards and watching wildlife programs on TV.

In spite of the apparent interest in wildlife across the state among differing groups of people the study showed that only 25 percent knew about the Non-Game Program and just over three percent of those receiving refunds from their taxes contributed. The study pointed out that the Commission had problems in letting citizens know about the program and how the fund is used. Many different forms of publicizing the program including TV and radio public service announcements and those mentioned in Non-Game Update December 1984. Virginian's can expect to see more publicity about the program in the future.

If you would like to know more about the Non-Game Tax Check Off write: Non-Game Program, Virginia Game Commission, P.O. Box 11104, Richmond, Virginia 23230-1104. To contribute to the program from your state tax form 760 or 760S see line 20A or 10A.—Susan Gilley







## Locked Horns

These two deer were found by B.B. Hannah of Natural Bridge. The 10 point and eight point bucks were so entangled that it was necessary to saw off a portion of the antler of the 10 pointer to free the deer. The 10 point deer died before help arrived, but the eight pointer dashed off into the woods as soon as he was untangled.

## International Canoe Races Go to Maryland

The 1989 Whitewater World Championships will be held at Savage River in Garrett County, Maryland. This was the outcome of the meeting of the International Canoe Federation, which met recently in Bulgaria.

The Garrett County site was representative of the United States bid and was presented to the International Canoe Federation by Susan Chamberlin, President of the American Canoe Federation.

The United States was in contention for the race site with Yugoslavia, Spain and Switzerland. This is the first time the United States has been selected for these races, which, in the past has been a predominantly European sport. The only time these races had been held outside of Europe was in 1979 when they were held in Canada.

The races are expected to attract participants from 20 countries around the world and several thousand spectators. □



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# -February Journal-



## Game Warden Honored

Virginia Game Warden Rick Perry recently received an honor that is indicative of the job members of the Virginia Commission of Game and Inland Fisheries law enforcement staff perform day in and day out, but are seldom recognized for. The five-year veteran was cited as Law Enforcement Officer of the Year by the Varina Ruritan Club.

What makes this honor so special is that the nomination came from former winners of the award, and all members of the Henrico County Police Department. Henrico Sgt. Harvey Wilson presented the award to Perry. Wilson said the fact Perry received unanimous support from fellow police officers is an indication of the hard work and dedication Perry has demonstrated in his area of coverage for the Game Commission.

## The National Scene

Federal budget cutters have conservationists on guard. Historically, fish and game interests have not fared well in similar climates. One question is will the Expanded Dingell-Johnson Act ever expand? If so, how much?

A Washington State Game Warden was killed when a hunter, illegally carrying a loaded gun in a vehicle, accidentally discharged the weapon.

A record 76 wild boar were killed in West Virginia's recent hunt. A total of 42 were stocked back in 1972-73 and their range is expanding. Biggest boar weighed 310 pounds.

A recent deer jacking and selling case in Virginia's Wythe and Pulaski counties resulted in 153 indictments for ten adults and one juvenile.

The Wildlife Legislative Fund has joined the Department of the Interior and the U.S. Fish and Wildlife Service as a defendant in a suit brought by the Humane Society of the United States to "end sport hunting on national refuges."

Assistant Secretary of the Interior, Ray Arnett has resigned.

Canada's new government is making big budget and personnel cuts in the Canadian Wildlife Service. Looks like a 27 percent cut in people and a 17 percent cut in funds.

Texas is taking a hard look at regulating bass tournaments.

Seven endangered whooping cranes died at the USFWS Patuxent Wildlife Research Center. The whoopers died of eastern equine encephalitis. The virus was transmitted by a rare mosquito (*Culiseta melanura*). Cold weather is expected to halt the disease.

The Emergency Wetlands Resources Act, aimed at providing federal and state funds for the acquisition of wetlands ran into trouble when North Carolina's Congressional delegation hooked their unpopular Oregon Inlet Jetties to it. Lots of folks in Congress consider the jetties to be environmentally unsound. The result is no act this year. Instead the Wetlands Loans Act was extended allowing Congress to



spend nearly \$22 million on wetlands this year and will hold off repayment of \$176 million borrowed so far until 1986.

The Virginia Game Commission now has piers on lakes Amelia, Orange and Brittle. These are excellent fishing platforms for handicapped anglers. All have been made attractive to fish through the placement of sunken cedar trees near them.

Princeton Township, New Jersey, banned hunting in 1972. Since then car/deer collisions have increased 342 percent, reports the Wildlife Management Institute. There were 33 in 1972, 81 in 1976 and 113 in 1982. □

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If you have questions about this, or any question concerning your *Virginia Wildlife* subscription, write to us in care of Data Processing, Virginia Game Commission, P.O. Box 11104, Richmond, Virginia 23230-1104, or call 804/257-1449.

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The 1985 Quail Unlimited Stamp Print by artist, Phillip Crowe.

## Quail Stamp/Print Now Available

Award winning artist Phillip Crowe has added another laurel to his impressive string of conservation stamps available to collectors. The 1985 Quail Unlimited Stamp/Print was done by Crowe and is now available for purchase. Crowe has signed a limited edition of fifteen hundred prints; the print and matching stamp sell together for \$130. The stamp sells for \$5.00 individually, or a block of four is \$20.00. Collector's mint sheets, which include ten stamps, are \$50.00. The design on this year's stamp is a bird dog, staunch on point, and reflects Crowe's dedication to portraying anatomical accuracy and settings. Crowe has won two Tennessee Duck Stamp awards and was recently named as the artist for the New Hampshire Duck Stamp.

Quail Unlimited hopes to raise enough money through this and other projects to fund a quarter of a million dollars in wildlife habitat projects in 1985. Quail Unlimited is also hoping to increase their membership rolls, encouraging expansion which will see them become able to establish wildlife habitats on private lands.

More information on the quail conservation print/stamp, wildlife projects or forming Quail Unlimited Chapters can be obtained by writing Quail Unlimited National Headquarters, P.O. Box 10041, Augusta, Georgia 30903.







# Bird of the Month

## The Red-Bellied Woodpecker

Two hundred and eight kinds of woodpeckers are known to science. They are found on every continent except Australia. The generic group to which the red-bellied belongs is tropical in origin, and it is the only species penetrating north into the temperate zone, ranging from southern Canada and Pennsylvania to Texas and Florida.

Thus, its limits coincide generally with the region ecologists call the Carolinian faunal zone. This embraces all of Virginia, save for the higher country in the western part of the state. There, the red-bellied is found only in the lower valleys.

Like several other birds typical of this faunal zone (the titmouse, Carolina wren and cardinal), this woodpecker is expanding northward. In the latter part of the last century, it was only rarely noted in the Washington, D.C. area. By the 1920's, it was listed as "rare, but increasing." Now it is a common bird in the District and northern Virginia.

Wherever it is found, the red-bellied is a year-round resident, a non-migratory species that wanders and drifts in search of food or mate, but makes no seasonal journeys. Most individuals probably live out their lives within a mile or two radius, though there does seem to be a tendency for birds at the northern extremes of the range to move south at the onset of very cold weather.

Like other woodpeckers, the red-bellied seeks its insect food in both living and dead trees. Flicker-like, it will also feed on the ground. A good portion of its diet is vegetable in character, consisting chiefly of wild fruits and mast. In autumn, wild grapes are a favorite, as are the fruits of the sour gum or tupelo. They come readily to the suburban feeding shelf, partaking of sunflower seed, corn and suet.

Among red-bellied's, the pair bond seems to be a strong one. It seems that mated birds often remain together through the winter months, sharing the same roosting cavity, and feeding during the day within call-notes range of each other. They are not, however, at all gregarious, as are some members of the woodpecker tribe, and do not gather in groups. Indeed, they are quite territorial, driving off vigorously any interloper.

With the coming of spring, another excavation is needed for nesting. The softer tissue of a dead limb is usually selected, but living trees may be used as well. The four glossy white eggs are laid on a bed of chips at the bottom of the cavity, which may be anywhere from 15 to 50 feet high. (One carefully studied nest, in an apple tree, was only nine feet up.)

Many contend that the name "red-bellied" is a misnomer, for the red on the lower belly usually goes unnoticed. It is not nearly as conspicuous as the brilliant red on the crown and the nape. And usually the belly is pressed against a trunk, or shadowed by the rest of the bird's body. But there is a decided reddish tinge to the underparts, most notably on a freshly moulted adult male.

The back and wings are barred, zebra-fashion, as are the central tail feathers. In flight, the flashing white at the base of the primaries is distinctive. The call is most often written as "chur, chur," but there is also a long rolling series of guttural notes and another series that sounds like "chiv, chiv, chiv."

The red-bellied woodpecker was first described for science by Carl Linnaeus, from specimens sent to him in Sweden. He called it *Centurus carolinensis*, "spine-tail from Carolina." (Recently, however, taxonomists have considered this species to be more closely allied to the wood-

peckers in the genus *Melanerpes* and have changed the name accordingly.)

Among other early American ornithologists it seems to have attracted little attention. Alexander Wilson's account of it was brief and inaccurate and Thomas Nuttall merely perpetuated some of the same errors in Wilson's book. Even Audubon, who spent much of his life in prime red-bellied country, gives the bird short shrift. He never figured it in any of his elaborate, dramatic compositions, as he did with most of the common birds of the south. He painted the bird but once, incorporating a pair into a composite that included seven other woodpeckers, some from the western states. □

by John W. Taylor



